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## 500 SERIES MICROPHONE STATIONS

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### GENERAL DESCRIPTION

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The 500 Series microphone stations provide an audio and control interface between IED's handheld and gooseneck microphones, and IED's 500ACS, 8000 Series TIPS™, and the 2000 Series UDAPS™.

The 500 Series microphone stations include four action buttons, each with a red 'Busy' and a green 'Ready' indicator. The 'Busy' LEDs indicate when the portion of the system requested is in use, and the 'Ready' LEDs indicate when the desired portion of the system is available for an action or announcement. Models with IED's hand held or handset microphones have the capability of using the push-to-talk button on the microphone as a fifth action button. Each of the four or five buttons can be assigned to do multiple functions, depending upon the system with which the microphone station is interfaced and the configuration of the system itself.

The audio section of the 500 Series microphone stations includes a balanced differential line receiver, a compressor, and a balanced line driver output capable of driving extremely long lines of low capacitance shielded twisted cable without significant high frequency rolloff.

There is a test oscillator built into the microphone station. It can be switched into the audio section, either by a specific keypad entry at the microphone station or by an entry at the main computer.

All of the 500 Series microphone stations, except for the all of the desktop and all of the gooseneck type microphone versions, have the capability of functioning with any combination of up to three external 500HH Hand Held Microphones in addition to the local microphone. The expansion microphones can be located up to 1000' away, interfacing to either a locking door or flush mount expansion plate. When expansion units are used, all microphones in the group operate on a priority basis. When the push-to-talk button is pressed on one microphone, the other microphones in the group are locked out until that push-to-talk button is released. The push-to-talk buttons on all units in the group are programmed for the same function. If the operator in a group needs to perform a different function, he/she must go to the four button station to perform any of the other four functions.

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#### Flush Mount Microphone Stations

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Two different flush mount configurations of the 500 Series microphone stations are available, with two different microphone type options.

The IED 500VFM is the vertical version of the flush mount microphone station. The 500 station electronics are mounted on a standard 4-gang faceplate with a velvet textured Lexan™ front plate which has a vertical orientation.

The IED 500HFM is the horizontal version of the flush mount microphone station. The 500 station electronics are mounted on a standard 4-gang faceplate with a velvet textured Lexan™ front plate which has a horizontal orientation.



Both version of the flush mount microphone stations can be supplied with any of the following two microphone options:

500HH Hand held microphone  
500G Gooseneck Microphone

Both versions of the 500 Series flush mount microphone stations can be mounted flush to a wall or counter, or surface mounted to a wall or counter.

In flush mounted applications for new construction, both the 500HFM and 500VFM will mount in a standard 4-gang back box, RACO box #952 or 953 with raised device cover #823, or equivalent. The tabs must be removed as shown in figure 9. IED provides the 500FBB Flush Mount Back Box for this application. See figure 8.

In surface mounted applications, IED provides the 500SBB Surface Mount Back Box to house the 500HFM and 500VFM. See figure 7. The 500SBB is painted the same color as the flush mount faceplates.

In flush mount applications for existing construction the 500SBB Surface Mount Back Box can be used with the 500FL flange to mount the flush mount microphone stations in an existing wall. The 500FL flange provides a 3/8" lip around the outside of the box to cover the edge of the cutout in the drywall around the back box. See figure 6.

The 500FMEC is a 4-gang flush mount microphone station with a built in compressor. It is designed for use in systems other than the 500ACS. This station can be supplied with the 500HH hand held microphone only.

### Desktop Microphone Stations

One desktop configuration of the 500 Series microphone stations is available, with three different microphone type options.

The 500DT is the desktop version of the 500 Series microphone station. It is intended for use on countertops or desktops, or for moving from place to place for paging applications.

The 500DT desktop microphone station can be supplied with any of the following two microphone options:

500HH Hand held microphone  
500G Gooseneck Microphone

The 500G Gooseneck Microphone mounts directly to the desktop microphone station via an XLR connector. The 500HH does not have a direct method to mount to the desktop microphone station. It connects to the station via a 6-conductor coiled cord which is terminated with an RJ45 molded modular connector. Hangers for these microphones are available from IED. The microphone type to be used with the 500DT must be specified when ordering so that it can be supplied with the proper microphone connector.

### Locking Door Microphone Stations

The locking door enclosure for the 500 Series microphone stations is available in one configuration with only the Hand Held microphone type option.

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The 500LD is the 500 Series Locking Door Microphone Station. It consists of a locking door box and an insert that houses the 500 Series microphone station electronics. It can be used for surface mount or flush mount applications.

Both of these microphone stations are supplied with a hanger which can accept the microphone which can be used with these stations.

Both version of the locking door microphone stations can be supplied with the 500HH Hand held microphone

The 500G Gooseneck Microphone is not an option for the locking door microphone stations.

### Expansion Stations

The 500 Series Flush Mount and Locking Door Stations can have up to three expansion microphone locations. The expansion locations can service microphones in two configurations.

The 500FME is a 4-gang flush mount expansion plate which can mount a remote microphone up to 1000' from the 500 Series Microphone Station. The plate itself is fabricated from velvet textured Lexan™ configured in a vertical orientation. The expansion plate assembly consists of the mounting plate, an RJ45 receptacle for the microphone connector, and a hanger to hold the microphone when it is not in use.

The 500FME will accept the 500HH Hand Held Microphone.

The 500FME mounts in a standard 4-gang electrical box such as the RACO #952 or 953 with raised device cover #823 (see figure 9), or equivalent, or in the IED 500SBB, figure 7, or 500FBB, figure 8.

The 500LDE is a locking door expansion microphone station which can mount a remote microphone up to 1000' from the 500 Series microphone station. The 500LDE consists of a locking door enclosure with an insert which holds an RJ45 modular receptacle for the microphone connector, and a hanger to hold the microphone when it is not in use. It can be used for both flush mount or surface mount applications.

The 500LDE can be supplied with the 500HH Hand Held Microphone.

### Microphone Station Options

Listed in Tables 1, 2, and 3 are all of the 500 Series microphone stations available as standard products. Any other configuration that is requested would be considered a custom product. Consult the factory for pricing and delivery of custom microphone stations.



MICROPHONE →	HAND HELD	GOOSENECK
Enclosure	Model	
Vertical Flush Mount	500VFM-H	500VFM-G
Horizontal Flush Mount	500HFM-H	500HFM-G
Desktop	500DT-H	500DT-G
Locking Door	500LD-H	N/A
Flush Mount, One Button	500FMEC-H	N/A

Table 1 - 500 Series Microphone Stations  
Available Combinations and Model Numbers

MICROPHONE →	HAND HELD	GOOSENECK
Enclosure	Model	
Flush Mount Expansion Station	500FME-H	N/A
Locking Door Expansion Station	500LDE-H	N/A

Table 2 - 500 Series and 508 Series  
Expansion Microphone Stations

MODEL	DESCRIPTION
500FL	Mounting flange for both vertical and horizontal flush mount microphone stations.
500SBB	Surface mount back box for 500 Series microphone stations.
500FBB	Flush mount back box for 500 Series microphone stations.

Table 3 - 500 Series Microphone Station  
Optional Hardware

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**SPECIFICATIONS**

**ELECTRICAL**

1. Gain, normal . . . . .	19 dB
2. Total Harmonic Distortion, THD . . . . .	<.05%
Normal Setup, input = -15 dBu, f = 200 Hz - 20 kHz, 30 kHz low pass filter	
3. Frequency Response . . . . .	-1, +0.1 dB
20 Hz - 20 kHz, no filters	
4. Signal to Noise Ratio (S/N) . . . . .	>75 dB
20 Hz to 20 kHz, referred to +4 dBu output, $R_L \geq 600 \Omega$	
5. Input Impedance . . . . .	50 k $\Omega$
6. Maximum Input . . . . .	+8 dBu
7. Compression Threshold, normal setup . . . . .	-14.5 dBu
8. Attack Time . . . . .	1.5 ms
9. Release Time	
40 dB Input Drop . . . . .	15 sec.
10 dB Input Drop . . . . .	3 sec.
10. Compression Ratio . . . . .	6:1
11. Oscillator Frequency . . . . .	500 Hz
12. Oscillator Output, Normal . . . . .	-15 dBu
13. Output Impedance . . . . .	<1 $\Omega$
14. Maximum Output Capability . . . . .	+24 dBu
Without compression, $R_L \geq 600 \Omega$	
15. Normal Output . . . . .	+5 dBu
10 dB into compression, $R_L \geq 600 \Omega$	
16. Power Requirements	
Supply Voltage Range . . . . .	+25.5 VDC - +31 VDC
Supply Current, Max. . . . .	110 mA
V = +30 VDC	

**CONTROLS**

1. Input Gain . . . . .	Rotary Trimpot
2. Master Output Level Control . . . . .	Rotary Trimpot
3. Compressor Level Control . . . . .	Rotary Trimpot
Note: All controls are factory preset for optimum performance. Consult factory for details.	

**INDICATORS**

1. Zone Group Ready . . . . .	4 Green LEDs
2. Zone Group Busy . . . . .	4 Red LEDs



**CONNECTORS** (Cable connectors required to interface with microphone stations)

- 1. Model 500DT
  - Power and control . . . . . 1 each 3 pin male XLR
  - Signal . . . . . 1 each 3 pin female XLR
- 2. Models 500VFM, 500HFM, 500LD . . . . . Phoenix 1803617
  - Signal and power - 6 position plug-in screw terminal connectors
- 3. Model 500FME . . . . . Phoenix 1792281
  - Signal and power - 6 position plug-in screw terminal connectors

**CONNECTING CABLE**

All 500 Series Microphone Stations

- 1. Audio signal . . . . . #22 AWG, stranded twisted pair w/overall shield
  - For distances up to approximately 2500 feet, Belden 8451, or equivalent
- 2. Control signal . . . . . #22 AWG, stranded twisted pair w/overall shield
  - For distances up to approximately 2500 feet, Belden 8451, or equivalent

All 500 Series Expansion Plates

- 1. Audio signal . . . . . #22 AWG, stranded twisted pair w/overall shield
  - For distances up to approximately 1000 feet, Belden 8451, or equivalent
- 2. Power and switch . . . . . #22 AWG, stranded twisted pair w/overall shield
  - For distances up to approximately 1000 feet, Belden 8451, or equivalent

**MECHANICAL**

Size, Maximum Overall Dimensions

Model 500DT

Free standing, less gooseneck

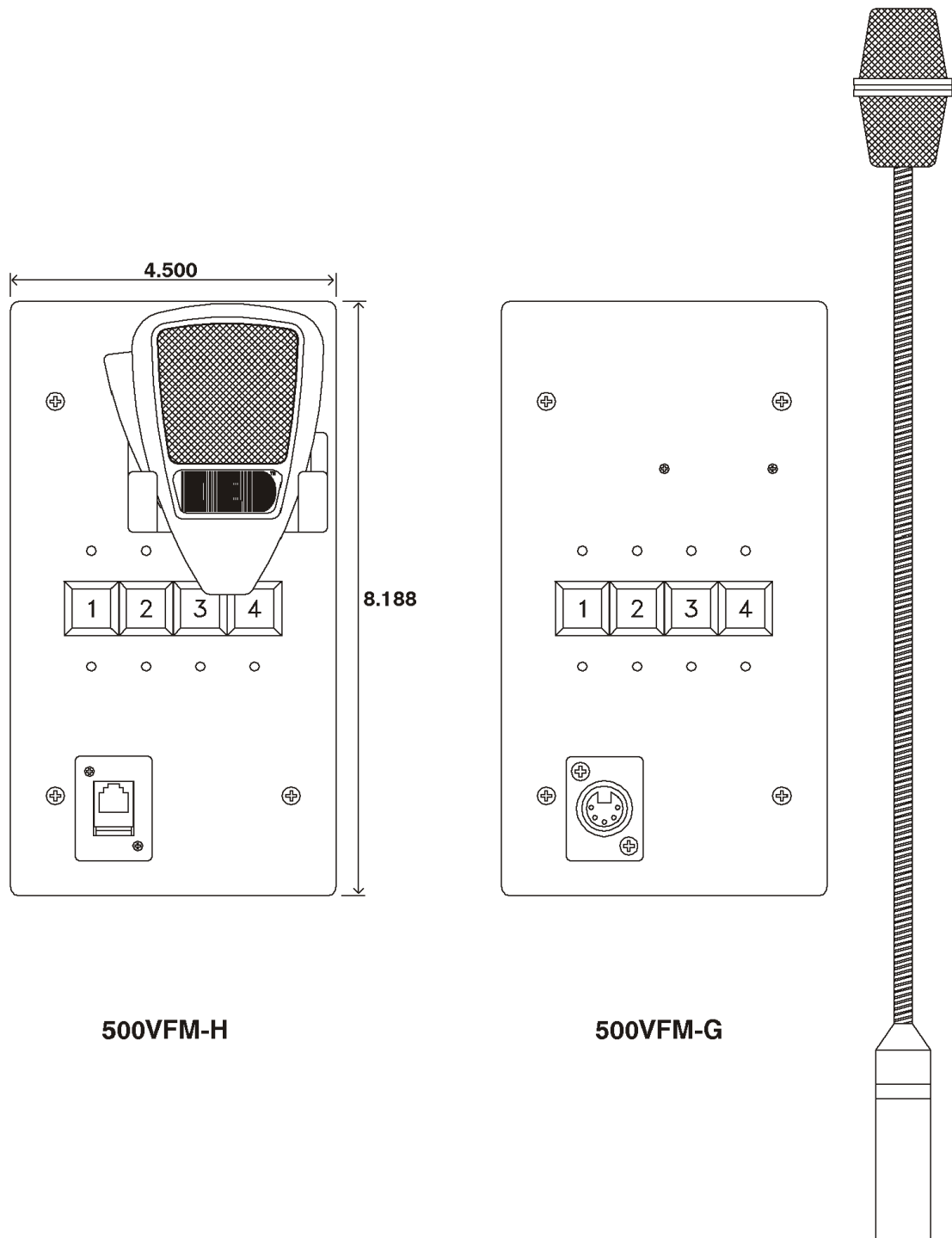
- Height . . . . . 3.15"
- Width . . . . . 6.25"
- Depth . . . . . 7.1"

- Model 500VFM . . . . . See figure 1
- Model 500HFM . . . . . See figure 2
- Model 500LD . . . . . See figure 3
- Model 500FME . . . . . See figure 4
- Model 500LDE . . . . . See figure 5
- Model 500FL . . . . . See figure 6
- Model 500SBB . . . . . See figure 7
- Model 500FBB . . . . . See figure 8

**ENVIRONMENTAL**

- 1. Operating Temperature Range . . . . . (+32 °F - +104 °F) 0 °C - +40 °C
- 2. Storage Temperature Range . . . . . (-40 °F - +158 °F) -40 °C - +70 °C

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500VFM-H

500VFM-G

Figure 1 - 500VFM Vertical Flush Mount Microphone Station  
All microphone options shown



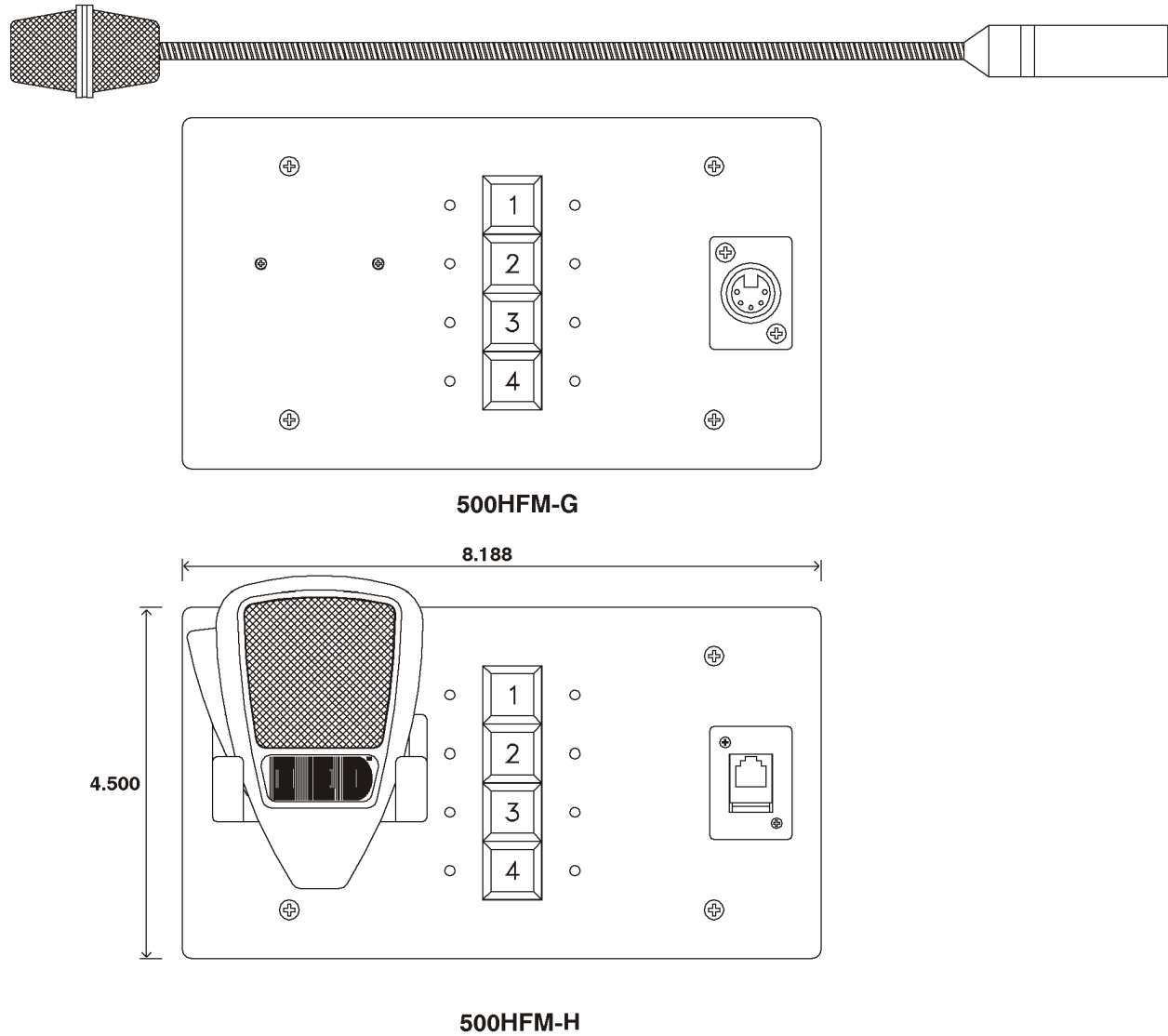


Figure 2 - 500HFM  
Horizontal Flush Mount Microphone Station  
All microphone options shown

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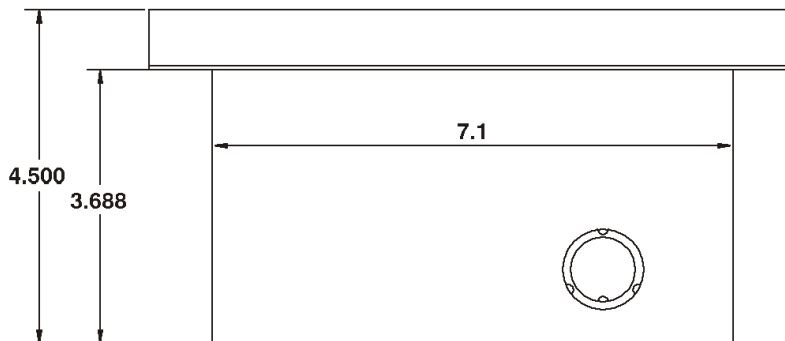
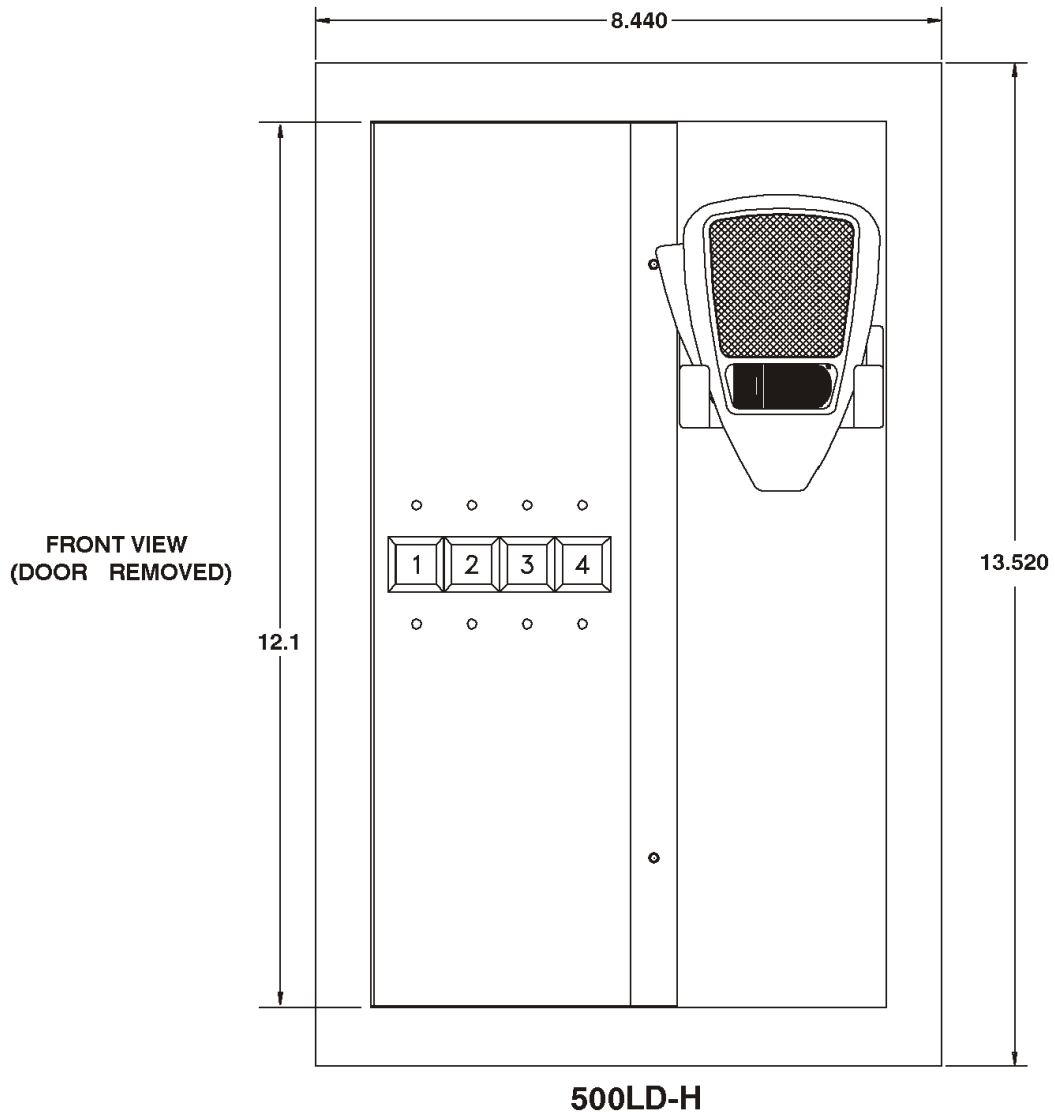
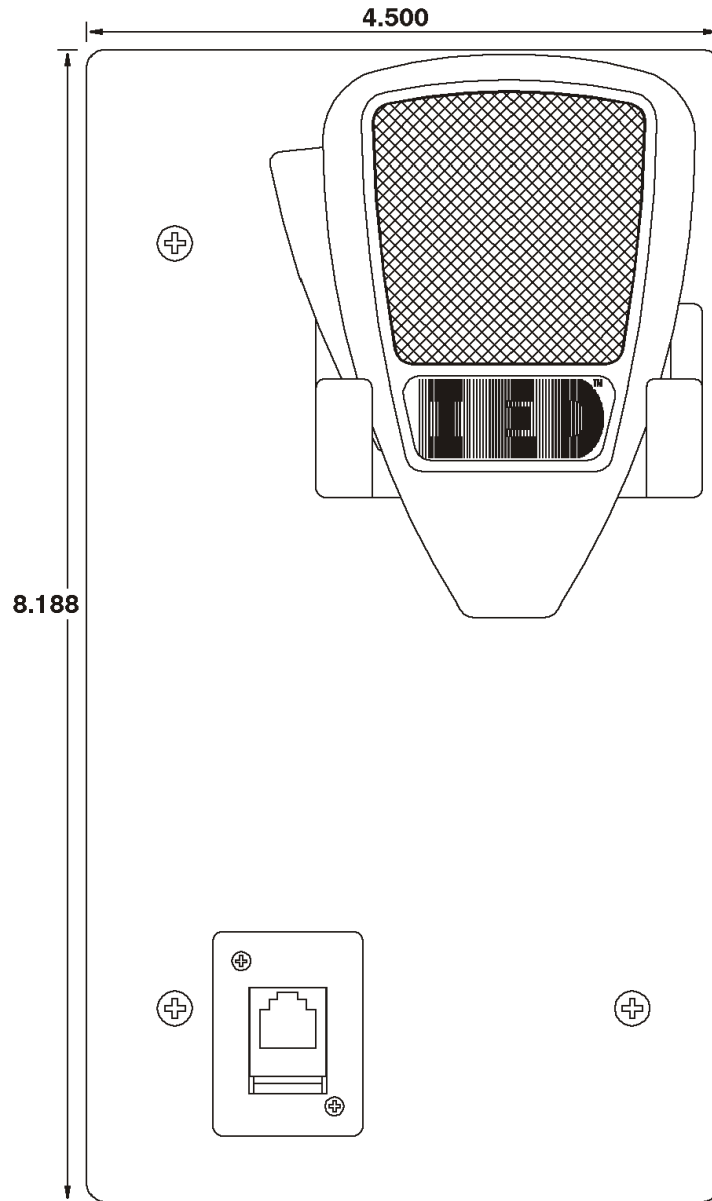


Figure 3 - 500LD Locking Door Enclosure





**500FME-H**

Figure 4 - 500FME Flush Mount Expansion Unit

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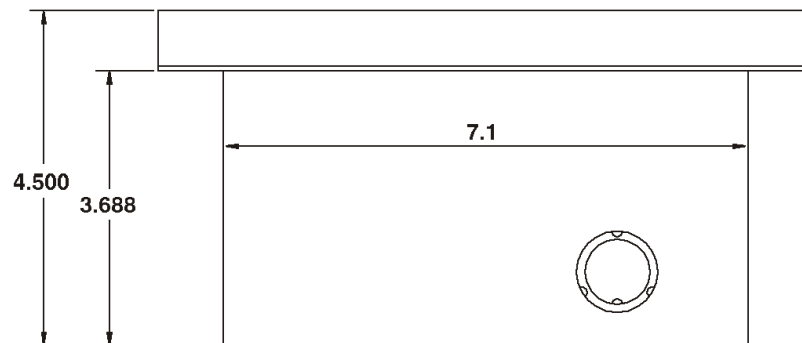
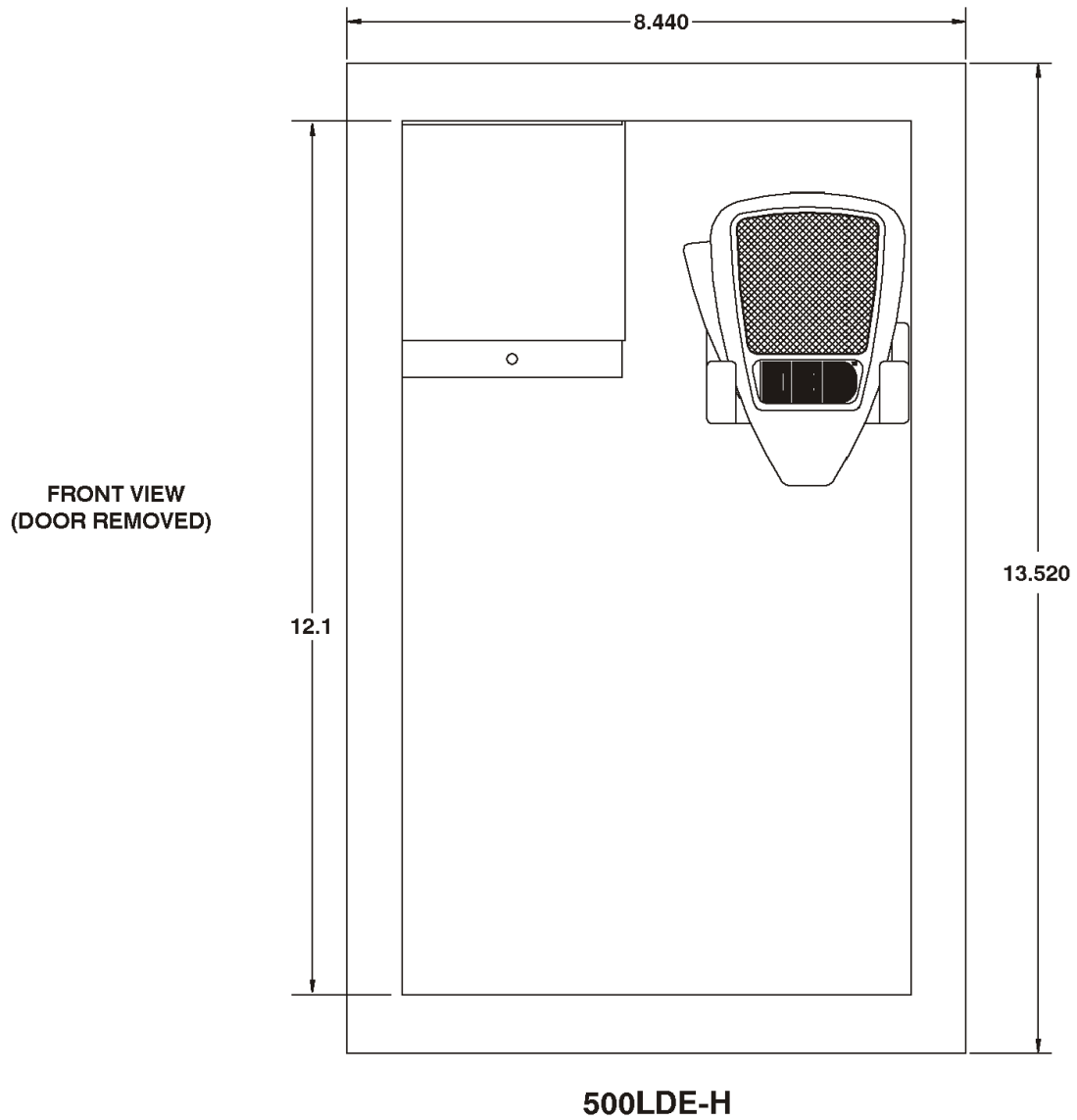


Figure 5 - 500LDE Locking Door Expansion Unit



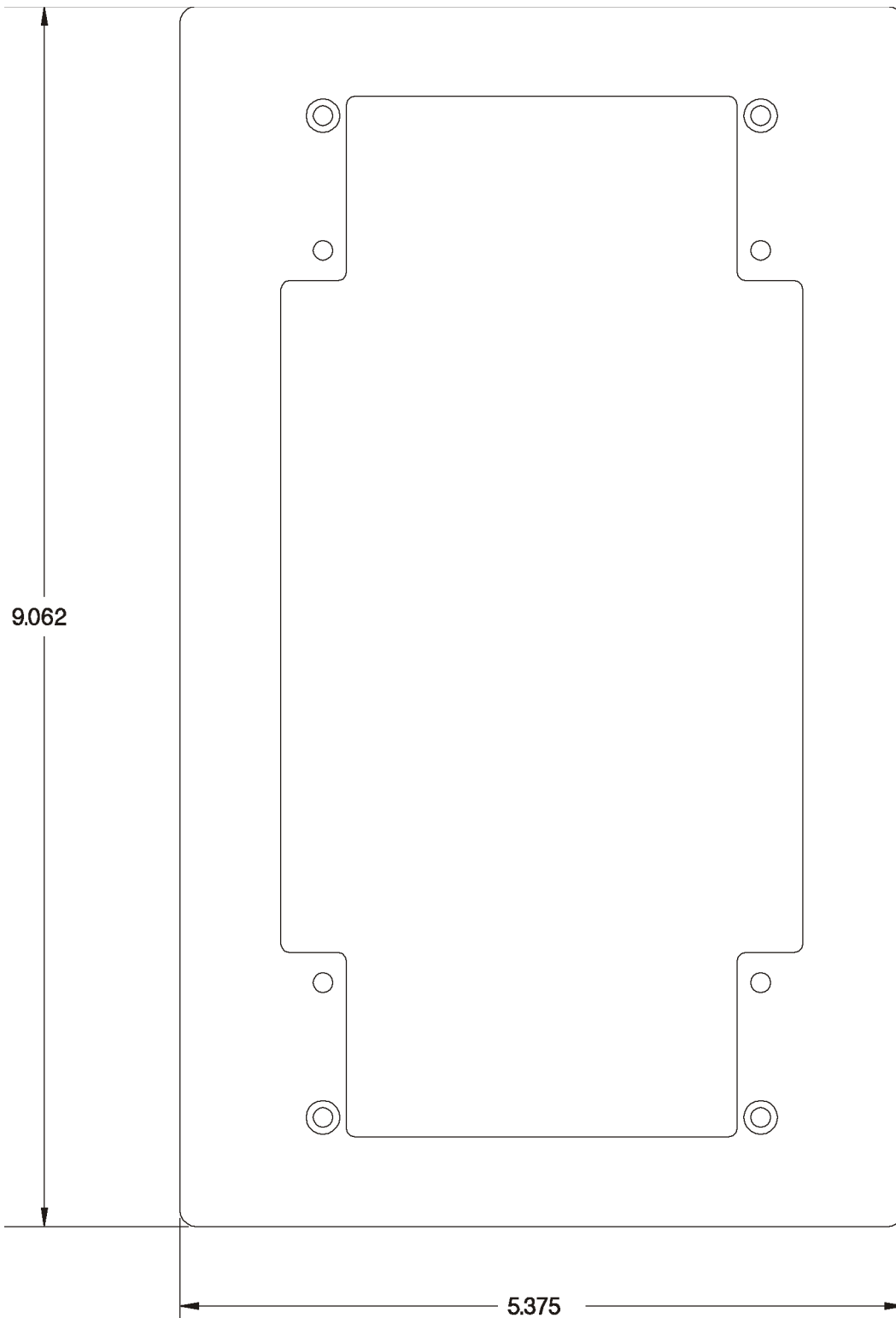


Figure 6 - 500FL Mounting Flange

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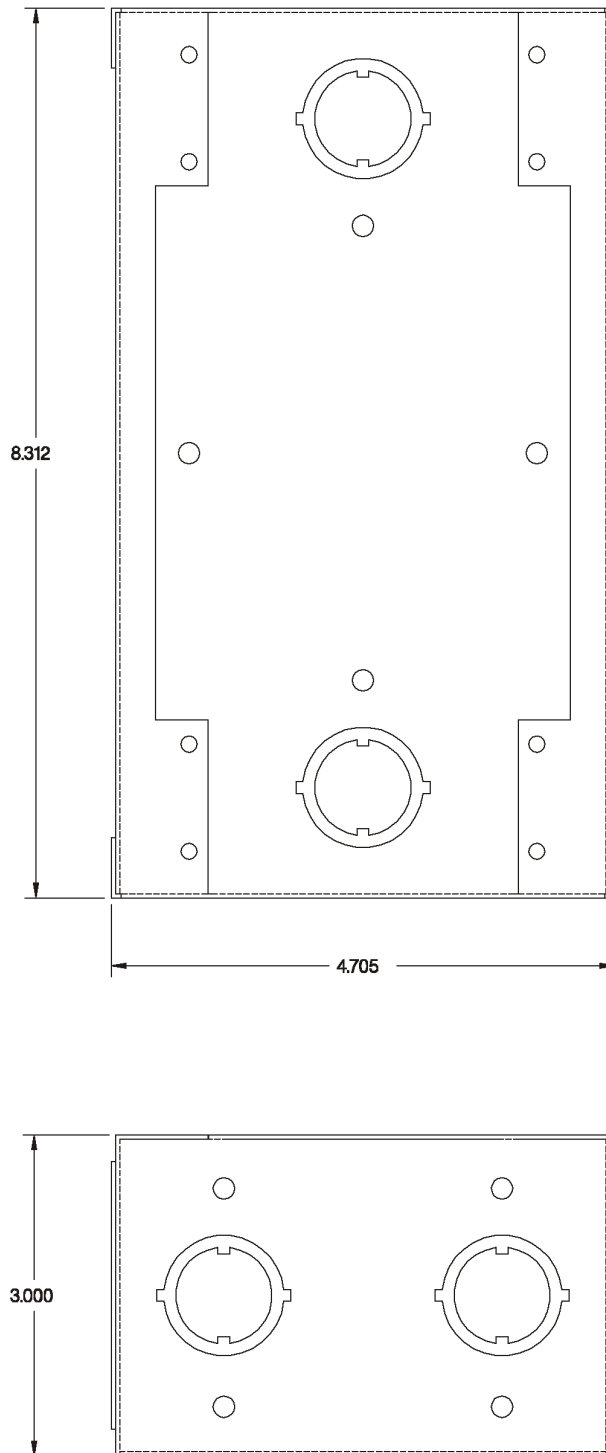


Figure 7 - 500SBB Surface Mount Back Box with Cover



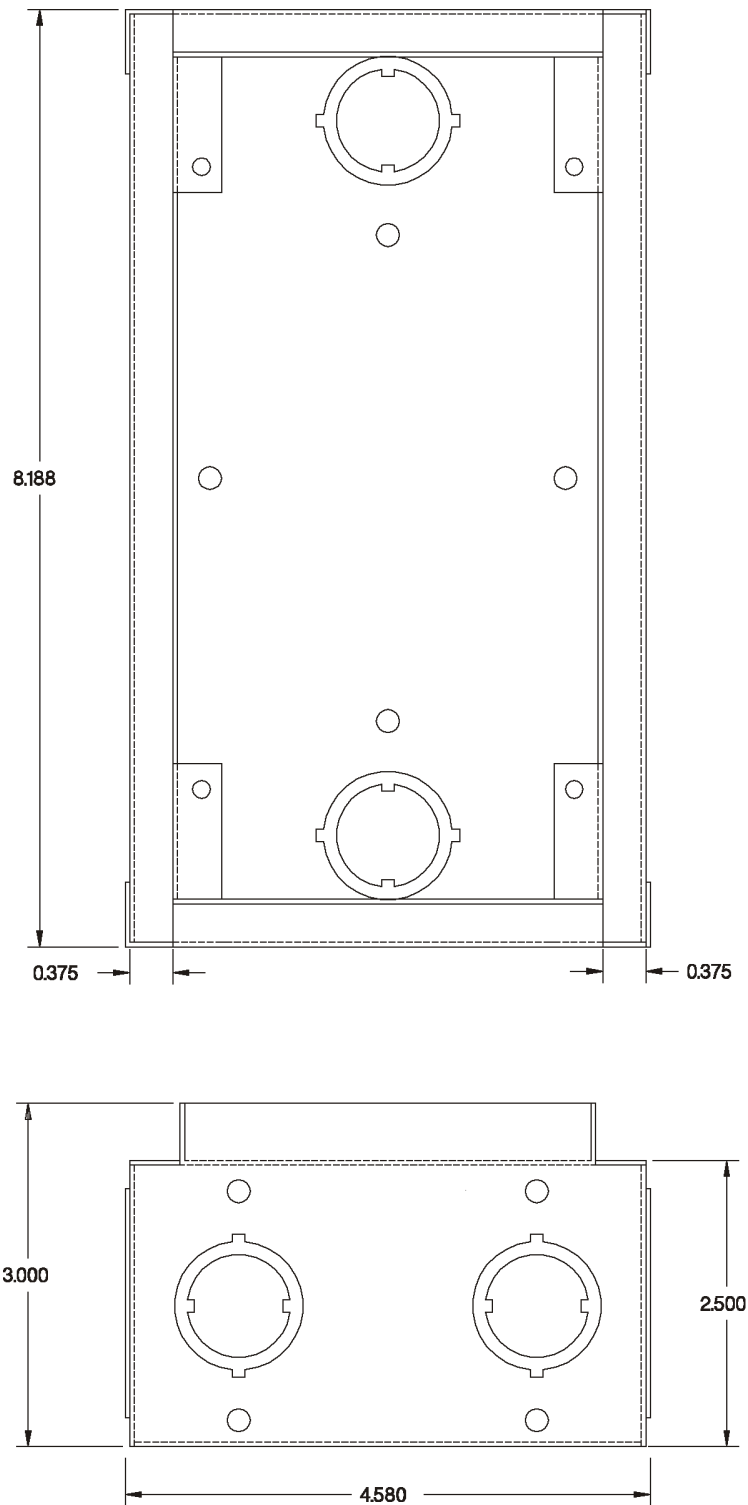


Figure 8 - 500FBB Flush Mount Back Box with Cover

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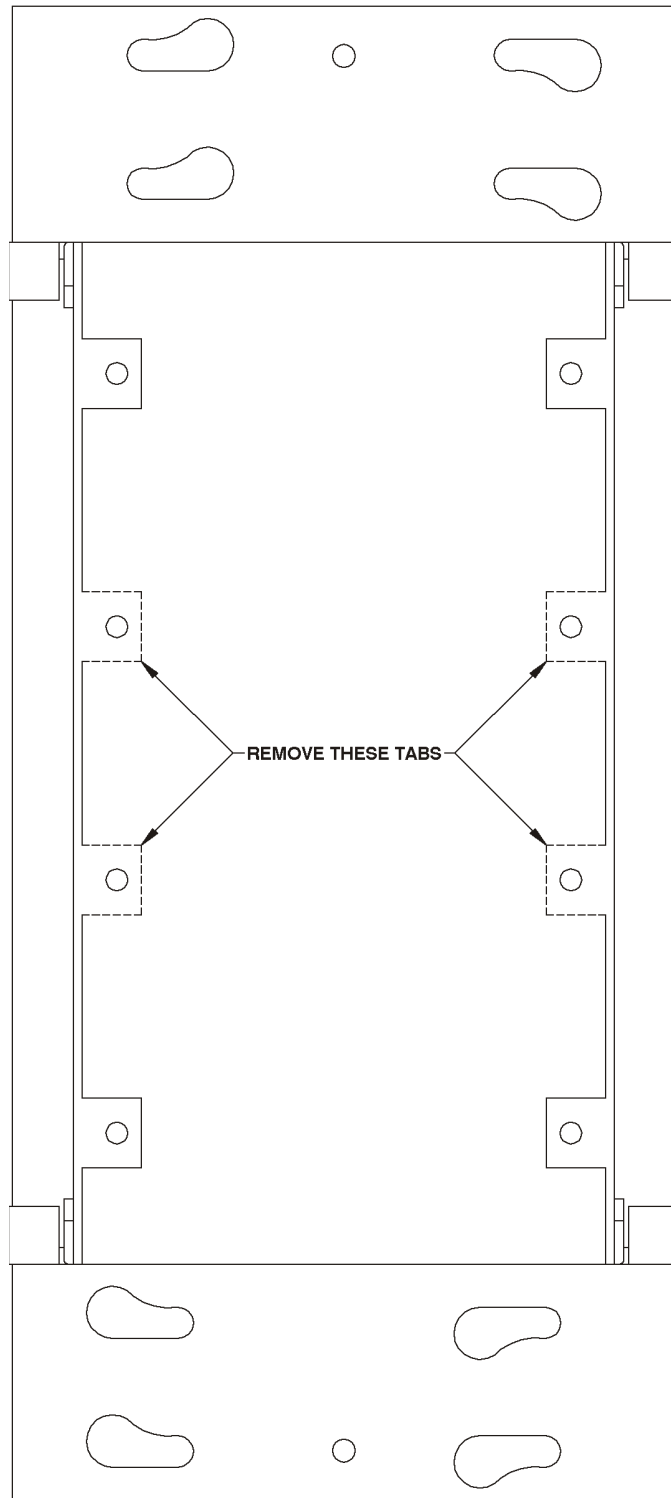


Figure 9 - RACO Back Box with Cover



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